

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1 (original). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, a guanidine, or a salt of formula $D^+ E^-$ wherein:

D^+ is a quaternary tetraalkylammonium cation, or a protonated form of an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, or a guanidine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolide anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

2 (original). The method of claim 1 wherein said neutralizing agent is a salt of formula $D^+ E^-$.

3 (original). The method of claim 2 wherein E^- is a tetrazolide anion.

4 (original). The method of claim 1 wherein E^- is 1H-tetrazolide anion, 5-methylthio-1H-tetrazolide anion, 5-ethylthio-1H-tetrazolide anion or 1-phenyl-5-thiol-1H-tetrazolide anion.

5 (original). The method of claim 1 wherein E^- is 1H-tetrazolide anion.

6 (original). The method of claim 3 wherein D^+ is a protonated form of any of an alkyl, alkenyl or alkynyl amine having from one to about 20 carbons, an aliphatic heterocyclic amine, an aromatic heterocyclic amine, or a guanidine.

7-10 (canceled).

11 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of an aromatic heterocyclic amine; and

E^- is a tetrazolide anion.

12 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of a mono-, di- or trialkyl pyridine that is optionally substituted with an amino group; and

E^- is a tetrazolide anion.

13 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of any of 2,4,6-collidine, 2,6-lutidine, pyridine, 2-methylpyridine, 2,6-diethylpyridine, 2,6-di(t-butyl)pyridine, 4-methyl-2,6-di(t-butyl)pyridine, or 2,4,6-tri(t-butyl)pyridine; and

E^- is a tetrazolide anion.

14 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of an alkylamino substituted pyridine; and

E^- is a tetrazolide anion.

15 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of 4-dimethylaminopyridine; and

E^- is a tetrazolide anion.

16-20 (canceled).

21 (original). The method of claim 3 wherein E⁻ is 1H-tetrazolide anion.

22-35 (canceled).

36 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, a guanidine, or a salt of formula D⁺ E⁻ wherein:

D⁺ is a protonated form of an aromatic heterocyclic amine; and

E⁻ is a tetrazolide anion, 4,5-dicyanoimidazolide anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

37 (previously presented). A method comprising reacting a nucleoside phosphoramidite with

a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, a guanidine, or a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of a mono-, di- or trialkyl pyridine that is optionally substituted with an amino group; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolidine anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

38 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an

aromatic heterocyclic amine, a guanidine, or a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of any of 2,4,6-collidine, 2,6-lutidine, pyridine, 2-methylpyridine, 2,6-diethylpyridine, 2,6-di(t-butyl)pyridine, 4-methyl-2,6-di(t-butyl)pyridine, or 2,4,6-tri(t-butyl)pyridine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolidine anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

39 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, a guanidine, or a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of an alkylamino substituted pyridine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolidine anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate

anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

40 (previously presented). A method comprising reacting a nucleoside phosphoramidite with a support bound oligomer in the presence of a neutralizing agent, said support bound oligomer having at least one unprotected internucleoside linkage selected from the group consisting of phosphate linkages, phosphorothioate linkages, and phosphorodithioate linkages;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, a guanidine, or a salt of formula $D^+ E^-$ wherein:

D^+ is a protonated form of 4-dimethylaminopyridine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolide anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

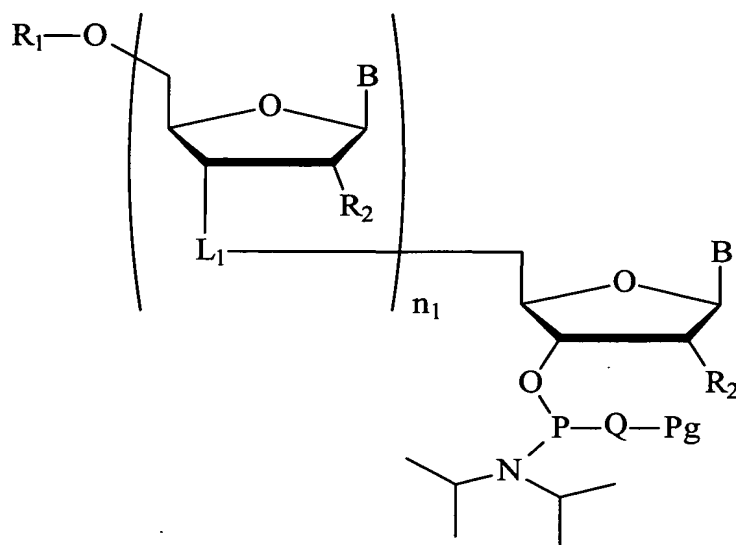
41-46 (canceled).

47 (original). The method of claim 3 wherein D^+ is a protonated form of trimethyl amine,

triethyl amine, triisopropyl amine, tributyl amine, triamyl amine, isopropyldimethyl amine, t-butyldimethyl amine, diisopropylethyl amine, N,N,N',N'-tetramethyl-1,2-diaminoethane, DBU, -methylmorpholine, N-methylpyrrolidine, N-methylpiperidine, N,N'-dimethylpiperazine, -ethylpyrrolidine, N-ethylpiperidine, N,N'-diethylpiperazine, 1,5-diazabicyclo[4.3.0]non-5-ene, 1,4-diazabicyclo[2.2.2]octane, or 1,5,7-triazabicyclo[4.4.0]dec-5-ene, 2,4,6-collidine, 2,6-lutidine, pyridine, 2-methylpyridine, 2,6-diethylpyridine, 2,6-di(t-butyl)pyridine, 4-methyl-2,6-di(t-butyl)pyridine, or 2,4,6-tri(t-butyl)pyridine, 4-dimethylaminopyridine, or N,N,N',N'-tetramethylguanidine, or tetramethylammonium, tetraethylammonium, tetrapropylammonium, tetrabutylammonium, trimethyloctylammonium, or triethylbenzylammonium cation; and

E⁻ is 1H-tetrazolide anion, 4,5-dicyanoimidazolide anion, methylsulfonate anion, trifluoromethylsulfonate anion, methylphenylsulfonate anion, trifluoromethylphenylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or trifluoroacetate anion.

48 (currently amended). A method of forming an internucleoside linkage comprising reacting a phosphoramidite of formula:



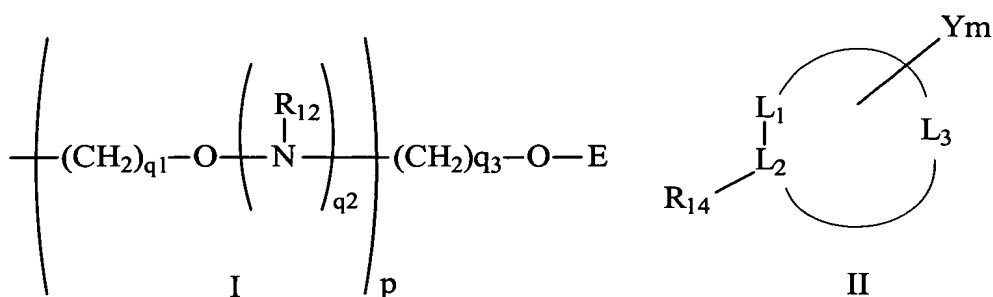
wherein:

L_1 is an internucleoside linkage;

n_1 is 0 to about 100;

R_1 is a hydroxyl protecting group;

R_2 is a 2'-substituent group, said 2'-substituent group being fluoro, chloro, bromo, O-alkyl, O-alkylamino, O-alkylalkoxy, protected O-alkylamino, O-alkylaminoalkyl, O-alkyl imidazole, polyethers of the formula $(O\text{-alkyl})_m$ where m is 1 to about 10, 2'-SR'' or 2'-NR''₂ groups, where each R'' is, independently, hydrogen, a protecting group or substituted or unsubstituted alkyl, alkenyl, or alkynyl, formula I or II:



wherein:

E is C₁-C₁₀ alkyl, N(R₁₂)(R₁₃) or N=C(R₁₂)(R₁₃);

each R₁₂ and R₁₃ is, independently, H, C₁-C₁₀ alkyl, a nitrogen protecting group, or R₁₂ and R₁₃, together, are a nitrogen protecting group or are joined in a ring structure that includes at least one additional heteroatom selected from N and O;

R₁₄ is OX₁, SX₁, or N(X₁)₂;

each X₁ is, independently, H, C₁-C₈ alkyl, C₁-C₈ haloalkyl, C(=NH)N(H)Z₁, C(=O)N(H)Z₁, or OC(=O)N(H)Z₁;

Z₁ is H or C₁-C₈ alkyl;

L₁, L₂ and L₃ comprise a ring system having from about 4 to about 7 carbon atoms or having from about 3 to about 6 carbon atoms and 1 or 2 heteroatoms, said heteroatoms being selected from oxygen, nitrogen and sulfur, wherein said ring system is aliphatic, unsaturated aliphatic, aromatic, or saturated or unsaturated heterocyclic;

Y_m is C₁-C₁₀ alkyl or haloalkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₆-C₁₄ aryl, N(R₁₂)(R₁₃) OR₁₂, halo, SR₁₂ or CN;

each q₁ is, independently, an integer from 2 to 10;

each q_i is 0 or 1;

p is an integer from 1 to 10; and

q_3 is an integer from 1 to 10;

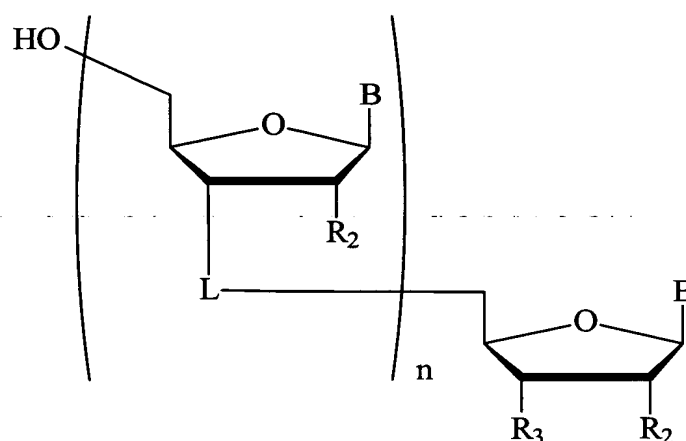
provided that when p is 0, q_3 is greater than 1;

B is a nucleobase;

Q is O or S;

Pg is a phosphoryl protecting group;

with a compound of formula:

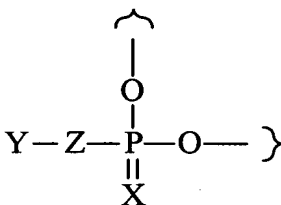


wherein

R₃ is a linker connected to a solid support;

n is from 1 to 100; and

L is an internucleoside linkage of formula:



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50 (original). The method of claim 49 wherein E⁻ is a tetrazolide anion.

51 (original). The method of claim 48 wherein E⁻ is 1H-tetrazolide anion, 5-methylthio-1H-tetrazolide anion, 5-ethylthio-1H-tetrazolide anion or 1-phenyl-5-thiol-1H-tetrazolide anion.

52 (original). The method of claim 48 wherein E⁻ is 1H-tetrazolide anion.

53-55 (canceled).

56 (original). The method of claim 50 wherein D⁺ is a protonated form of an aromatic heterocyclic amine.

57 (original). The method of claim 50 wherein D⁺ is a protonated form of a mono-, di- or trialkyl pyridine that is optionally substituted with an amino group.

58 (original). The method of claim 50 wherein D⁺ is a protonated form of any of 2,4,6-collidine, 2,6-lutidine, pyridine, 2-methylpyridine, 2,6-diethylpyridine, 2,6-di(t-butyl)pyridine, 4-methyl-2,6-di(t-butyl)pyridine, or 2,4,6-tri(t-butyl)pyridine.

59 (original). The method of claim 50 wherein D⁺ is a protonated form of an alkylamino substituted pyridine.

60 (original). The method of claim 50 wherein D⁺ is a protonated form of 4-dimethylaminopyridine.

61-65 (canceled).

66 (original). The method of claim 50 wherein E⁻ is 1H-tetrazolide anion.

67-80 (canceled).

81 (original). The method of claim 48 wherein D⁺ is a protonated form of an aromatic heterocyclic amine.

82 (original). The method of claim 48 wherein D⁺ is a protonated form of a mono-, di- or trialkyl pyridine that is optionally substituted with an amino group.

83 (original). The method of claim 48 wherein D⁺ is a protonated form of any of 2,4,6-collidine, 2,6-lutidine, pyridine, 2-methylpyridine, 2,6-diethylpyridine, 2,6-di(t-butyl)pyridine, 4-methyl-2,6-di(t-butyl)pyridine, or 2,4,6-tri(t-butyl)pyridine.

84 (original). The method of claim 48 wherein D⁺ is a protonated form of an alkylamino substituted pyridine.

85 (original). The method of claim 48 wherein D⁺ is a protonated form of 4-dimethylaminopyridine.

86-91 (canceled).

92 (original). The method of claim 50 wherein D⁺ is a protonated form of trimethyl amine, triethyl amine, triisopropyl amine, tributyl amine, triamyl amine, isopropyldimethyl amine, t-butylldimethyl amine, diisopropylethyl amine, N,N,N',N'-tetramethyl-1,2-diaminoethane, DBU, N-

methylmorpholine, N-methylpyrrolidine, N-methylpiperidine, N,N'-dimethylpiperazine, N-ethylpyrrolidine, N-ethylpiperidine, N,N'-diethylpiperazine, 1,5-diazabicyclo[4.3.0]non-5-ene, 1,4-diazabicyclo[2.2.2]octane, or 1,5,7-triazabicyclo[4.4.0]dec-5-ene, 2,4,6-collidine, 2,6-lutidine, pyridine, 2-methylpyridine, 2,6-diethylpyridine, 2,6-di(t-butyl)pyridine, 4-methyl-2,6-di(t-butyl)pyridine, or 2,4,6-tri(t-butyl)pyridine, 4-dimethylaminopyridine, or N,N,N',N'-tetramethylguanidine, or tetramethylammonium, tetraethylammonium, tetrapropylammonium, tetrabutylammonium, trimethyloctylammonium, or triethylbenzylammonium cation; and

E⁻ is 1H-tetrazolide anion, 4,5-dicyanoimidazolide anion, methylsulfonate anion, trifluoromethylsulfonate anion, methylphenylsulfonate anion, trifluoromethylphenylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or trifluoroacetate anion.

93 (original). The method of claim 50 wherein Q is O; Z is O;

Pg is β -cyanoethyl, methyl, (N-methyl-N-benzoylamino)ethyl, (N-ethyl-N-benzoylamino)ethyl, 2-[N-methyl-N-(4-methoxybenzoyl)amino]ethyl, 2-(N-isopropyl-N-benzoylamino)ethyl, 2-[N-ethyl-N-(4-methoxybenzoyl)amino]ethyl, 2-[N-isopropyl-N-(4-methoxybenzoyl)amino]ethyl, 2-[N-methyl-N-(4-dimethylaminobenzoyl)amino]ethyl, 2-[N-ethyl-N-(4-dimethylaminobenzoyl)amino]ethyl, 2-[N-isopropyl-N-(4-dimethylaminobenzoyl)amino]ethyl, 2-(thionobenzoylamino)ethyl, 3-(thionobenzoylamino)propyl, 2-(N-phenylthiocarbamoylamino)ethyl, 2-[(1-naphthyl)carbamoxyloxy]ethyl, diphenylsilylethyl, δ -cyanobutenyl, cyano *p*-xylyl, methyl-N-trifluoroacetyl ethyl or acetoxymethoxy ethyl; and

Y is β -cyanoethyl, allyl, methyl, (N-methyl-N-benzoylamino)ethyl, (N-ethyl-N-benzoylamino)ethyl, 2-[N-methyl-N-(4-methoxybenzoyl)amino]ethyl, 2-(N-isopropyl-N-benzoylamino)ethyl, 2-[N-ethyl-N-(4-methoxybenzoyl)amino]ethyl, 2-[N-isopropyl-N-(4-methoxybenzoyl)amino]ethyl, 2-[N-methyl-N-(4-dimethylaminobenzoyl)amino]ethyl, 2-[N-ethyl-N-(4-dimethylaminobenzoyl)amino]ethyl, 2-[N-isopropyl-N-(4-dimethylaminobenzoyl)amino]ethyl, 2-(thionobenzoylamino)ethyl, 3-(thionobenzoylamino)propyl, 2-(N-phenylthiocarbamoylamino)ethyl, 2-[(1-naphthyl)carbamoxyloxy]ethyl, diphenylsilylethyl, δ -cyanobutenyl, cyano *p*-xylyl, methyl-N-

trifluoroacetyl ethyl, acetoxo phenoxy ethyl, or a negative charge.

94 (original). The method of claim 48 wherein:

said neutralizing agent is a salt of formula $D^+ E^-$;

E^- is a tetrazolide anion;

D^+ is a protonated form of a mono-, di- or trialkyl pyridine that is optionally substituted with an amino group;

Q is O;

Z is O;

R_4 and R_5 are each diisopropyl, or R_4 and R_5 together with the nitrogen atom to which they are attached form morpholine;

Pg is β -cyanoethyl, methyl, diphenylsilylethyl, δ -cyanobutenyl, cyano *p*-xylyl, methyl-N-trifluoroacetyl ethyl or acetoxo phenoxy ethyl; and

Y is β -cyanoethyl, allyl, methyl, diphenylsilylethyl, δ -cyanobutenyl, cyano *p*-xylyl, methyl-N-trifluoroacetyl ethyl or acetoxo phenoxy ethyl or a negative charge.

95 (original). The method of claim 94 wherein:

E^- is 1H-tetrazolide anion;

D^+ is a protonated form of dimethylaminopyridine;

Pg is β -cyanoethyl, diphenylsilylethyl, δ -cyanobutenyl, cyano *p*-xylyl, methyl-N-trifluoroacetyl ethyl or acetoxo phenoxy ethyl; and

Y is β -cyanoethyl, allyl, diphenylsilylethyl, δ -cyanobutenyl, cyano *p*-xylyl, methyl-N-trifluoroacetyl ethyl, acetoxo phenoxy ethyl or a negative charge.

96 (original). A method comprising the steps of:

(a) providing a solid support having a 5'-O-protected phosphorus-linked oligomer bound

thereto, said phosphorus-linked oligomer having at least one phosphoryl internucleoside linkage that does not bear a phosphoryl protecting group;

(b) deprotecting the 5'-hydroxyl of the 5'-O-protected phosphorus-linked oligomer with a deprotecting reagent;

(c) washing the deprotected phosphorus-linked oligomer on the solid support with a solution containing a neutralizing agent;

(d) reacting the deprotected 5'-hydroxyl with an 5'-protected nucleoside phosphoramidite to produce a phosphite triester linkage therebetween; and

(e) oxidizing or sulfurizing the covalent linkage to form a phosphodiester, phosphorothioate, phosphorodithioate or H-phosphonate linkage; and

optionally repeating steps b through e at least once for subsequent couplings of additional nucleoside phosphoramidites;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, a guanidine, or a salt of formula $D^+ E^-$ wherein:

D^+ is a quaternary tetraalkylammonium cation, or a protonated form of an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, or a guanidine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolidine anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

97 (original). A method comprising the steps of:

(a) providing a solid support having a 5'-O-protected phosphorus-linked oligomer bound thereto, said phosphorus-linked oligomer having at least one phosphoryl internucleoside linkage that

does not bear a phosphoryl protecting group;

(b) deprotecting the 5'-hydroxyl of the 5'-O-protected phosphorus-linked oligomer with a deprotecting reagent to form a support bound 5'-deprotected phosphorus-linked oligomer;

(c) optionally washing the deprotected phosphorus-linked oligomer on the solid support;

(d) contacting the support bound 5'-deprotected phosphorus-linked oligomer with a solution comprising a 5'-protected nucleoside phosphoramidite to produce a phosphite triester linkage therebetween, wherein said solution further comprises a neutralizing agent; and

(e) oxidizing or sulfurizing the phosphite triester linkage to form a phosphodiester, phosphorothioate, phosphorodithioate or H-phosphonate linkage; and

optionally repeating steps b through e at least once for subsequent couplings of additional nucleoside phosphoramidites;

wherein said neutralizing agent is:

an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, a guanidine, or a salt of formula $D^+ E^-$ wherein:

D^+ is a quaternary tetraalkylammonium cation, or a protonated form of an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, or a guanidine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolidine anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

98 (previously presented). A composition comprising a 5'-protected nucleoside phosphoramidite and a salt of formula $D^+ E^-$ wherein:

a protonated form of an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, or a guanidine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolide anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion.

99 (previously presented). A composition comprising a 5'-protected nucleoside phosphoramidite and a salt of formula $D^+ E^-$ wherein:

E^- is a tetrazolide anion; and

D^+ is a protonated form of a mono-, di- or trialkyl pyridine that is optionally substituted with an amino group.

100 (previously presented). A composition comprising a 5'-protected nucleoside phosphoramidite and a salt of formula $D^+ E^-$ wherein:

E^- is 1H-tetrazolide anion; and

D^+ is a protonated form of dimethylaminopyridine.

101 (previously presented). A composition comprising:
-- a 5'-protected nucleoside phosphoramidite;
-- a salt of formula $D^+ E^-$ wherein:

D^+ is a quaternary tetraalkylammonium cation, or a protonated form of an aliphatic amine, an aliphatic heterocyclic amine, an aromatic amine, an aromatic heterocyclic amine, or a guanidine; and

E^- is a tetrazolide anion, 4,5-dicyanoimidazolide anion, a substituted or unsubstituted alkylsulfonate anion, a substituted or unsubstituted arylsulfonate anion, tetrafluoroborate anion, hexafluorophosphate anion, or a trihaloacetate anion; and

-- a solid support having a 5'-O-protected phosphorus-linked oligomer bound thereto, said phosphorus-linked oligomer having at least one phosphoryl internucleoside linkage that does

not bear a phosphoryl protecting group.

102 (canceled)

103 (original). The composition of claim 100 further comprising a solid support having a 5'-O-protected phosphorus-linked oligomer bound thereto, said phosphorus-linked oligomer having at least one phosphoryl internucleoside linkage that does not bear a phosphoryl protecting group.

104. (previously presented) The method of claim 50 wherein D⁺ is a protonated form of alkyl, alkenyl or alkynyl amine having from one to about 20 carbons, an aliphatic heterocyclic amine, an aromatic heterocyclic amine, or a guanidine.

105. (Canceled)